

[2010] [SAT0354] LONG-TERM EFFECT OF STRONTIUM RANELATE ON SERUM C-TERMINAL PROPEPTIDE OF TYPE I PROCOLLAGEN (PICP) AND URINE CROSS-LINKED N-TELOPEPTIDE (U-NTX) IN WOMEN WITH POSTMENOPAUSAL OSTEOPOROSIS

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Background: Previous clinical findings reported the increase of bone-specific alkaline phosphatase (BALP) level and the decrease of cross-linked C-telopeptides (S-CTX) level in strontium ranelate-treated osteoporotic women compared to patients receiving placebo.

Objectives: The objective of the present study is to assess the effect of strontium ranelate on serum C-terminal propeptide of type I procollagen (PICP), a marker of bone formation, and urine cross-linked N-telopeptide of type I collagen (U-NTX), a marker of bone resorption, in women with postmenopausal osteoporosis.

Methods: PICP was assessed (RIA, Orion Diagnostica) and U-NTX was assessed (Osteomark® ELISA) in the TROPOS study, a randomised placebo-controlled trial that assessed the anti-fracture efficacy of strontium ranelate in postmenopausal women with osteoporosis. All markers were measured at baseline and after 3, 6, 12, 24 and 36 months. Differences over time in biochemical markers levels between the strontium ranelate group and the placebo group were assessed by analysis of variance with baseline biochemical markers levels as covariate.

Results: Mean (SD) age of the study population was 76.7 (5.0) years with a body mass index of 25.5 (4.0) Median (min-max) baseline values were 129.4 (48.5 – 1837.4) ng/mL for PICP and 51.2 (3.9 – 473.4) nmol BCE/mmol creatinine for U-NTX. At baseline, no significant differences were observed between the strontium ranelate group and the placebo group for demographic characteristics and biochemical markers levels. At the third month of therapy, the serum concentration of PICP was higher in the strontium ranelate group than in the placebo group, with a mean (SD) 9.20 (1.07) ng/mL (6.6%) difference between groups ($p < 0.001$), and this difference persisted at each evaluation during the three years (all $p < 0.01$). The concentration of U-NTX was lower in the strontium ranelate group than in the placebo group at month 3, with a mean (SD) 5.00 (0.68) nmol BCE/mmol creatinine (8.9%) difference between the two groups ($p < 0.001$), and at each subsequent evaluation during the three years (all $p < 0.001$).

Conclusion: These results confirm the dual mode of action of strontium ranelate with an increase of bone formation and a decrease of bone resorption, compared to placebo.

References:

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